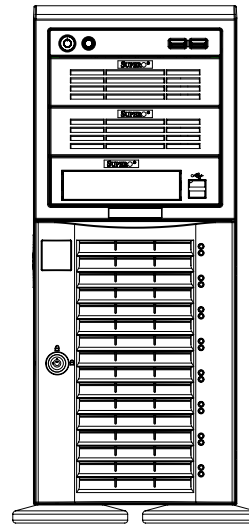
SUPERO®

# SC743 Chassis Series



SC743TQ-865
SC743TQ-R760
SC743S2-760
SC743S1-760
SC743T-R760
SC743i-R760
SC743TQ-650
SC743S2-650
SC743S1-650
SC743T-650
SC743i-650
SC743S1-645
SC743T-645
SC743i-645
SC743i-465
SC743TQ-865B-SQ

# USER'S MANUAL

1.2a

The information in this User's Manual has been carefully reviewed and is believed to be accurate. The vendor assumes no responsibility for any inaccuracies that may be contained in this document, makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. **Please Note: For the most up-to-date version of this manual, please see our web site at www.supermicro.com.**

Super Micro Computer, Inc. ("Supermicro") reserves the right to make changes to the product described in this manual at any time and without notice. This product, including software, if any, and documentation may not, in whole or in part, be copied, photocopied, reproduced, translated or reduced to any medium or machine without prior written consent.

IN NO EVENT WILL SUPERMICRO BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, SPECULATIVE OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OR INABILITY TO USE THIS PRODUCT OR DOCUMENTATION, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN PARTICULAR, SUPERMICRO SHALL NOT HAVE LIABILITY FOR ANY HARDWARE, SOFTWARE, OR DATA STORED OR USED WITH THE PRODUCT, INCLUDING THE COSTS OF REPAIRING, REPLACING, INTEGRATING, INSTALLING OR RECOVERING SUCH HARDWARE, SOFTWARE, OR DATA.

Any disputes arising between manufacturer and customer shall be governed by the laws of Santa Clara County in the State of California, USA. The State of California, County of Santa Clara shall be the exclusive venue for the resolution of any such disputes. Super Micro's total liability for all claims will not exceed the price paid for the hardware product.

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate"

WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

Manual Revision 1.2a
Release Date: December 15, 2008

Unless you request and receive written permission from Super Micro Computer, Inc., you may not copy any part of this document.

Information in this document is subject to change without notice. Other products and companies referred to herein are trademarks or registered trademarks of their respective companies or mark holders.

Copyright © 2008 by Super Micro Computer, Inc.
All rights reserved.
**Printed in the United States of America**

# Preface

## About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC743 chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro's SC743 chassis features a unique and highly-optimized design. The chassis is equipped with a 465, 645, 650, 760 or 865 Watt power supply, and high-performance fans provide ample optimized cooling.

This manual lists compatible parts available when this document was published. Always refer to the our Web site for updates on supported parts and configurations.

## Manual Organization

### Chapter 1: Introduction

The first chapter provides a checklist of the main components included with this chassis and describes the main features of the SC743 chassis. This chapter also includes contact information.

### Chapter 2: System Safety

This chapter lists warnings, precautions, and system safety. It recommended that you thoroughly familiarize yourself installing and servicing this chassis safety precautions.

### Chapter 3: Chassis Components

Refer here for details on this chassis model including the fans, airflow shields, and other components.

### Chapter 4: Chassis Setup and Maintenance

Follow the procedures given in this chapter when installing or removing components, or reconfiguring your chassis.

### Chapter 5: Rack Installation

Refer to this chapter for detailed information on chassis rack installation. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis into a rack environment.

### Appendix A: Cables, Screws and other Accessories

### Appendix B: Power Supply Specifications

### Appendix C: CSE-M34S/CSE-M34T Mobile Rack Specifications

### Appendix D: CSE-M35S/CSE-M35T1 Mobile Rack Specifications

### Appendix E: SAS-743TQ Backplane Sepcifications

# Table of Contents


***Chapter 1 Introduction***

1-1 Overview ..... 1-1
1-2 Shipping List ..... 1-1
Part Numbers ..... 1-1
1-3 Where to get Replacement Components ..... 1-2
1-4 Contacting Supermicro ..... 1-3
1-5 Returning Merchandise for Service ..... 1-4

***Chapter 2 System Safety***

2-1 Overview ..... 2-1
2-2 Warnings and Precautions ..... 2-1
2-3 Preparing for Setup ..... 2-1
2-4 Electrical Safety Precautions ..... 2-2
2-5 General Safety Precautions ..... 2-3
2-6 System Safety ..... 2-3

***Chapter 3 Chassis Components***

3-1 Overview ..... 3-1
3-2 Components ..... 3-1
Chassis ..... 3-1
Mounting to a Rack (Optional) ..... 3-1
Power Supply ..... 3-1
3-3 Where to get Replacement Components ..... 3-2
3-4 Front LED Panel ..... 3-2
3-5 Control Panel Buttons ..... 3-3
3-6 Control Panel LEDs ..... 3-3

***Chapter 4 Chassis Setup and Maintenance***

4-1 Overview ..... 4-1
4-2 Removing the Chassis Cover ..... 4-2
4-3 Accessing the Hot-Swappable Drive Trays ..... 4-3
4-4 Installing Fixed Hard Drives in SC743i Series Chassis Models ..... 4-4
4-5 Installing Hard Drives into the Drive Trays ..... 4-5
4-6 Configuring the Storage Module ..... 4-6
Storage Module Options ..... 4-6
4-7 Removing and Replacing the System Fans ..... 4-8
SC743TQ-865B-SQ Cooling System ..... 4-8
Standard Cooling Systems ..... 4-8
4-8 Removing the Air Shroud ..... 4-10

4-9 Installing the Motherboard ..... 4-11
4-10 Installing Add-on Cards ..... 4-13
4-11 Power Supply ..... 4-15
465, 645, 650 and 865 Watt Power Supplies ..... 4-15
760 Watt Power Supply ..... 4-16
4-12 Accessing the Interior Space Between the Backplane and the Midplane ..... 4-17
4-13 SCSI (Super) GEM Driver Installation Instructions for Windows OS ..... 4-18

***Chapter 5 Rack Installation***

5-1 Overview ..... 5-1
5-2 Unpacking the System ..... 5-1
5-3 Preparing for Setup ..... 5-1
Choosing a Setup Location ..... 5-1
Rack Precautions ..... 5-2
General Server Precautions ..... 5-2
Rack Mounting Considerations ..... 5-3
Ambient Operating Temperature ..... 5-3
Reduced Airflow ..... 5-3
Mechanical Loading ..... 5-3
Circuit Overloading ..... 5-3
5-4 Installing the Chassis Rack Mounting Rails ..... 5-4

***Appendix A Cables, Screws, and other Accessories***

***Appendix B Power Supply Specifications***

***Appendix C CSE-M34S/CSE-M34T Mobile Rack Specifications***

***Appendix D CSE-M35S/CSE-M35T1 Mobile Rack Specifications***

***Appendix E SAS-743TQ Backplane Sepcifications***

# Chapter 1

# Introduction

## 1-1 Overview

Supermicro's SC743 chassis features a unique and highly-optimized design. The chassis is equipped with a high-efficiency 80%+ low-noise power supply.

## 1-2 Shipping List

### Part Numbers

Please visit the the Supermicro Web site for the latest shiping lists and part numbers for your particular chassis model at http://www.supermicro.com/

| Model | CPU | HDD | I/O Slots | Power Supply |
|---|---|---|---|---|
| SC743TQ-865-B-SQ | DP Xeon | 8x SAS/SATA | 7x FF | 865W |
| SC743TQ-865B | DP Xeon | 8x SAS/SATA | 7x FF | 865W |
| SC743TQ-R760 / SC743TQ-R760B | DP Xeon 800 FSB | 8x SAS/SATA | 7x FF | 760W |
| SC743S2-R760 / SC743S2-R760B | DP Xeon 800 FSB | 8x SCA Dual Channel | 7x FF | 760W |
| SC743S1-R760 / SC743S1-R760B | DP Xeon 800 FSB | 8x SCA | 7x FF | 760W |
| SC743T-R760 / SC743T-R760B | DP Xeon 800 FSB | 8x SATA | 7x FF | 760W |
| SC743i-R760 / SC743i-R760B | DP Xeon 800 FSB | 8x Fixed | 7x FF | 760W |
| SC743TQ-R650 / SC743TQ-R650B | DP Xeon 800 FSB | 8x SAS/SATA | 7x FF | 650W |
| SC743S2-R650 / SC743S2-R650B | DP Xeon 800 FSB | 8x SCA Dual Channel | 7x FF | 650W |
| SC743S1-R650 / SC743S1-R650B | DP Xeon 800 FSB | 8x SCA | 7x FF | 650W |
| SC743T-R650 / SC743T-R650B | DP Xeon 800 FSB | 8x SATA | 7x FF | 650W |

| | | | | |
|---|---|---|---|---|
| SC743i-R650 / SC743i-R650B | DP Xeon 800 FSB | 8x Fixed | 7x FF | 650W |
| SC743S1-R645 / SC743S1-R645B | DP Xeon 800 FSB | 8x SCA | 7x FF | 645W Low Noise |
| SC743T-R645 / SC743T-R645B | DP Xeon 800 FSB | 8x SATA | 7x FF | 645W Low Noise |
| SC743i-R645 / SC743i-R645B | DP Xeon 800 FSB | 8x Fixed | 7x FF | 645W Low Noise |
| SC743i-465 / SC743i-465B | DP Xeon 800 FSB | 8x Fixed | 7x FF | 465W Low Noise |

## 1-3 Where to get Replacement Components

Although not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors / System Integrators / Resellers. A list of Supermicro Authorized Distributors / System Integrators /Reseller can be found at: http://www.supermicro.com. Click the Where to Buy link.

## 1-4 Contacting Supermicro

### Headquarters


| | |
|---|---|
| Address: | Super Micro Computer, Inc. |
| | 980 Rock Ave. |
| | San Jose, CA 95131 U.S.A. |
| Tel: | +1 (408) 503-8000 |
| Fax: | +1 (408) 503-8008 |
| Email: | marketing@supermicro.com (General Information) |
| | support@supermicro.com (Technical Support) |
| Web Site: | www.supermicro.com |


### Europe


| | |
|---|---|
| Address: | Super Micro Computer B.V. |
| | Het Sterrenbeeld 28, 5215 ML |
| | 's-Hertogenbosch, The Netherlands |
| Tel: | +31 (0) 73-6400390 |
| Fax: | +31 (0) 73-6416525 |
| Email: | sales@supermicro.nl (General Information) |
| | support@supermicro.nl (Technical Support) |
| | rma@supermicro.nl (Customer Support) |


### Asia-Pacific


| | |
|---|---|
| Address: | Super Micro Computer, Inc. |
| | 4F, No. 232-1, Liancheng Rd. |
| | Chung-Ho 235, Taipei County |
| | Taiwan, R.O.C. |
| Tel: | +886-(2) 8226-3990 |
| Fax: | +886-(2) 8226-3991 |
| Web Site: | www.supermicro.com.tw |
| Technical Support: | |
| Email: | support@supermicro.com.tw |
| Tel: | 886-2-8226-1900 |

## 1-5 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

# Chapter 2

# System Safety

## 2-1 Overview

This chapter provides a quick setup checklist to get your chassis up and running. Following the steps in the order given should enable you to have your chassis setup and operational within a minimal amount of time. This quick setup assumes that you are an experienced technician, familiar with common concepts and terminology.

## 2-2 Warnings and Precautions

You should inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, file a damage claim with carrier who delivered your system.

Decide on a suitable location for the rack unit that will hold that chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.

You will also need it placed near at least one grounded power outlet. When configured, the SC743 chassis includes one power supply.

## 2-3 Preparing for Setup

The SC743 chassis may stand as a tower or bolt directly to a rack. The mounting screws you will need to install the systems into the rack are included. Please read this manual in its entirety before you begin the installation procedure.

## 2-4 Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the SC743 from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high-voltage components.
- Power should always be disconnected from the system when removing or installing main system components, such as the serverboard, memory modules and the DVD-ROM and floppy drives (not necessary for hot-swappable drives). When disconnecting power, you should first power down the system with the operating system and then unplug the power cords from all the power supply modules in the system.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power, if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cord must include a grounding plug and must be plugged into grounded electrical outlets.
- Serverboard battery: CAUTION - There is a danger of explosion if the on-board battery is installed upside down, which will reverse its polarities This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- DVD-ROM laser: CAUTION - This server may have come equipped with a DVD-ROM drive. To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.

## 2-5 General Safety Precautions

- Keep the area around the chassis clean and free of clutter.
- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.
- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

## 2-6 System Safety

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- Use a grounded wrist strap designed to prevent static discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.

- Touch a grounded metal object before removing any board from its antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the serverboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the serverboard.

# Chapter 3

# Chassis Components

## 3-1 Overview

This chapter describes the most common components included with your chassis. Some components listed may not be included or compatible with your particular chassis model. For more information, see the installation instructions detailed later in this manual.

## 3-2 Components

### Chassis

Chassis may include one of the following three options:

- Up to three 5.25" hard drives.
- Up to five 3.5" hard drives.
- Up to six add-on cards

For the latest shipping lists, visit our Web site at: http://www.supermicro.com.

### Mounting to a Rack (Optional)

The SC743 can be placed in a rack for secure storage and use. To setup your rack, follow the step-by-step instructions included in this manual.

### Power Supply

Each SC743 chassis model includes a high-efficiency power supply with thermal control fan, rated at 465, 645, 650, 760 or 865 Watts. In the unlikely event your power supply fails, replacement is simple. The power supply simply needs to be unscrewed from the chassis and replaced.

## 3-3 Where to get Replacement Components

Although not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors/ System Integrators/Resellers. A list of Supermicro Authorized Distributors/System Integrators/Resellers can be found at: http://www.supermicro.com. Click the Where to Buy link

## 3-4 Front LED Panel

The following diagram defines each component of the front LED panel.

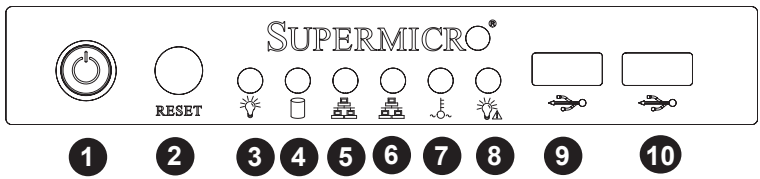



**Figure 3-1: Front LED Panel**

1. Power Button
2. System Reset
3. Power Indicator
4. HDD Activity Indicator
5. LAN Inidicator
6. LAN Indicator
7. CPU Temperature/Fan Failure Indicator
8. Power Failure Indicator
9. USB Port
10. USB Port

## 3-5 Control Panel Buttons

There are two push-buttons located on the front of the chassis. These are (in order from left to right) a reset button and a power on/off button.

- **Power:** The main power switch is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.

- **Reset:** The reset button is used to reboot the system.

## 3-6 Control Panel LEDs

The control panel located on the front of the SC811 chassis has five LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

- **Power:** The main power switch is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug the system's power cord before servicing.

- **HDD:** Indicates IDE channel activity. SAS/SATA drive, SCSI drive, and/or DVD-ROM drive activity when flashing.

- **NIC2:** Indicates network activity on GLAN2 when flashing.

- **NIC1:** Indicates network activity on GLAN1 when flashing.

- **Overheat/Fan Fail:** When this LED flashes it indicates a fan failure. When continuously on (not flashing) it indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check the routing of the cables and make sure all fans are present and operating normally. You should also check to make sure that the chassis covers are installed. Finally, verify that the heatsinks are installed properly. This LED will remain flashing or on as long as the overheat condition exists.

- **Power Fail:** Indicates a power failure to the system's power supply units.

## Notes

# Chapter 4

# Chassis Setup and Maintenance

## 4-1 Overview

This chapter covers the steps required to install components and perform maintenance on the chassis. The only tool you will need to install components and perform maintenance is a Phillips screwdriver. Print this page to use as a reference while setting up your chassis.

The SC743 i series chassis models do not come equipped with hot-swappable hard drives. Chassis models in the i series, such as SC743i-650, SC743i-645 and SC743i-465 must be powered down and the power supply must be disconnected from the backplane, prior to removing the hard drives. See the instructions in this section for details on how to remove and install fixed hard drives.

All other SC743 chassis models include hot-swappable hard drives which may be replaced without powering down the system. See the instructions in this chapter for details on how to install and remove hot-swappable hard drives.

**Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2: System Safety and the warning/precautions listed in the setup instructions.**

## 4-2 Removing the Chassis Cover

***Disconnecting the Chassis from the Power Source***

1. Turn off all peripheral devices and turn off the power supply connected to the SC743.
2. Unplug all power cords from the system or the wall outlets.
3. Disconnect all cables and label the cables for easy identification.

**Warning:** Use a grounded wrist strap designed to prevent static discharge when handling components.

After completing the above steps, you can remove the chassis cover and install components and devices into the chassis as described in this chapter.

***Removing the Chassis Cover***

1. Press the release tab to unlock the cover.
2. The release tab will pop open as shown.
3. Slide the cover back and off of the chassis.

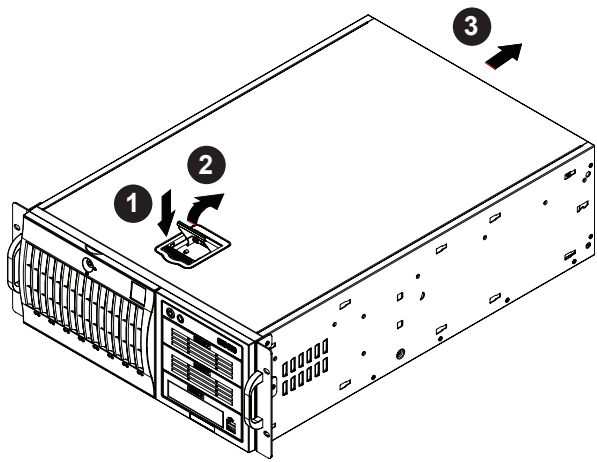



**Figure 4-1: Removing the Chassis Cover**

## 4-3 Accessing the Hot-Swappable Drive Trays

Hot-swappable drives may be removed and installed from the chassis without powering-down the system and without opening the chassis cover.

***Accessing and Installing Hard Drives***

1. Unlock and open the drive tray door as shown.
2. Press the release tab located on the drive tray door to release the drive tray from its locking position.
3. Lift up the drive tray handle.
4. Pull the drive tray door downward and pull the drive tray out from the chassis. (Note: The orientation of the picture shown below is for rack mount systems.)

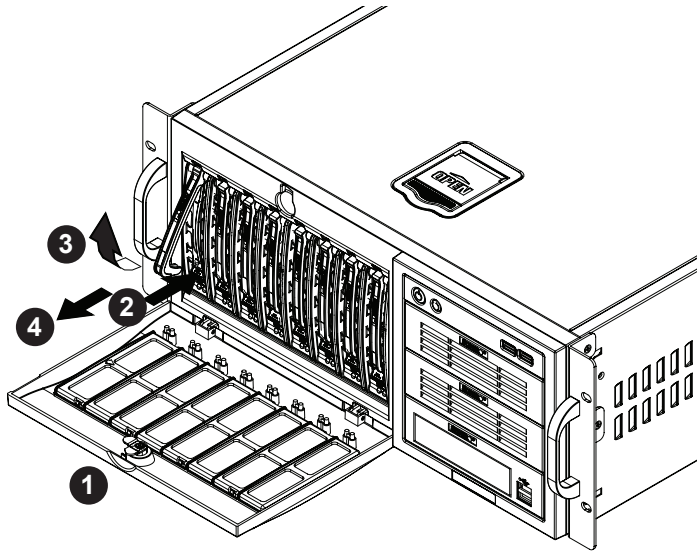



**Figure 4-2: Removing Hard Drive Trays**

## 4-4 Installing Fixed Hard Drives in SC743i Series Chassis Models

***Disconnecting the Chassis from the Power Source***

1. Turn off all peripheral devices and turn off the power supply connected to the SC743.
2. Unplug all power cords from the system or the wall outlets.
3. Disconnect all cables and label the cables for easy identification.
4. Open the chassis cover as described in section 4-2.
5. Disconnect the wiring which the hard drive to either the motherboard or the add-on card of the motherboard, depending upon your chassis model.
6. Unlock and open the drive tray door as shown.
7. Press the release tab located on the drive tray door to release the drive tray from its locking position.
8. Lift up the drive tray handle.
9. Pull the drive tray door downward and pull the drive tray out from the chassis. (Note: The orientation of the picture shown below is for rack mount systems.)

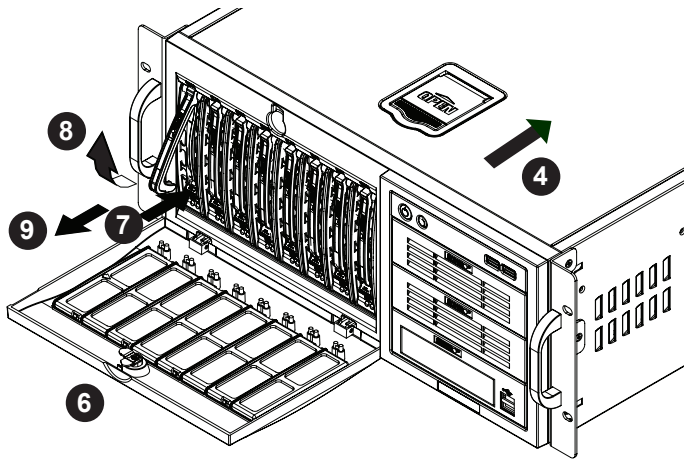
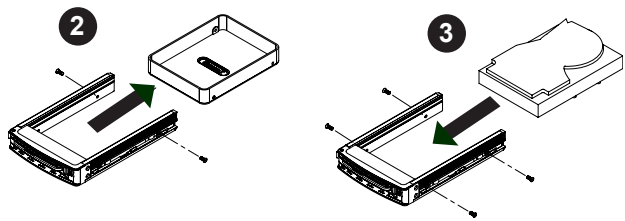



**Figure 4-3: Removing Hard Drive Trays**

## 4-5 Installing Hard Drives into the Drive Trays

***Installing Hard Drives***

1. Remove the screws from the hard drive tray and set them aside for later use.
2. Remove the dummy drive from the hard drive tray.
3. Mount a hard drive into the hard drive tray
4. Replace the screws which were set aside earlier.
5. Install the hard drive into the chassis.
6. Push down the release tab over the newly installed hard drive.
7. Close the hard drive tray door.




**Removing the Dummy Drive** **Installing the Hard Drive**

**Figure 4-4: Hard Drive Trays**

# 4-6 Configuring the Storage Module

## Storage Module Options

The storage module can configured to accomodate a variety of data storage devices such as CD, IDE, DVD, tape and floppy drives. The chassis may be rotated from a vertical tower position, to a horizontal rack mounting position to accomdate use of these devices. The following configurations may be used in the SC743 chassis:

- 5.25" Drives: Install any combination of three 5.25" devices.
- 3.5" Drives: Install any combination of five 3.5" devices using an M35 mobile rack inside the storage module.
- Tower Configuration: Rotate the chassis into an upright tower position. Remove the storage module, rotate it 90 degrees and reinstall it back into the chassis.
- Mobile Rack: Remove the storage module and replace it with either the CSE0M34T or CSSE-M35S/T1 mobile rack.

***Removing the Storage Module***

1. Locate the release tab on top of the storage module as shown below. Press the release tab to unlock the storage module.
2. Once unlocked, push the module forward and out of the chassis.

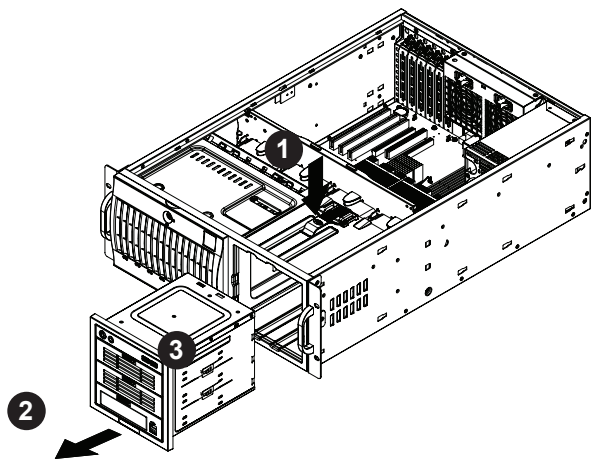



**Figure 4-5: Removing the Chassis Cover**

***Configuring the Storage Module for 5.25" Devices***

1. Remove the 5.25” drive trays from the storage module.
2. Remove the screws and drive tray brackets from the drive trays.
3. Install the 5.25” devices into the storage module.
4. Replace the module back into the chassis.
5. Ensure that the storage module is securely locked into position.

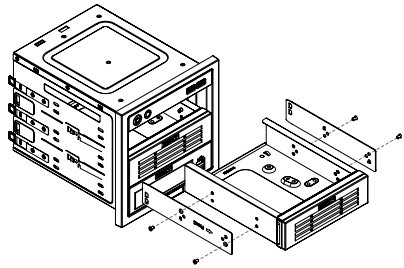


**Figure 4-6: Installing 5.25" Devices into the Storage Module**

***Configuring the Storage Module for 3.5" Devices with a Mobile Rack***

1. Remove the storage module from the chassis.
2. Remove the screws and brackets from the storage module.
3. Install the 3.5” devices into the mobile rack.
4. Secure the brackets to the mobile rack.
5. Slide the mobile rack into the storage module
6. Slide the storage module into the chassis.

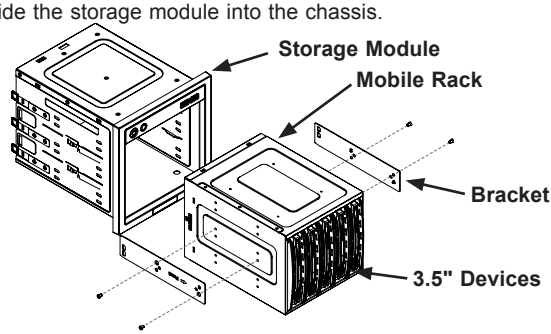



**Figure 4-7: Installing 3.5" Devices into Mobile Rack and Storage Module**

## 4-7 Removing and Replacing the System Fans

Before installing the motherboard in the chassis or accessing the motherboard after installation, it is necessary to remove the system fans. One set is located at the rear of the chassis, the other set is located in the middle of the chassis.

### SC743TQ-865B-SQ Cooling System

The SC743TQ-865B-SQ model chassis are equipped with two super quiet mid-chassis fans, two non-functional "dummy" fans, one rear fan, and does not require an air shroud. This chassis does not require an air shroud. In the unlikely event that a system fan needs to be replaced, be sure to specify the SQ model number when ordering parts.

### Standard Cooling Systems

Most SC743 model chassis include mid-chassis cooling fans, rear cooling fans and an air shroud to channel air within the chassis.

***Removing and Replacing Mid-chassis Fans***

1. Press the release tab located on the left side of the middle chassis fan
2. While holding down the release tab, pull the fan upwards, and out of the chassis.
3. When replacing the middle chassis fan, push the fan back into the fan module slot until a click is heard, indicating that the fan has locked into position.

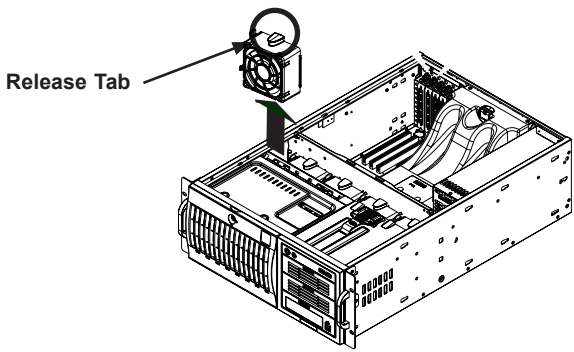



**Figure 4-8: Removing the Middle Chassis Fans**

***Removing Rear Chassis Fans***

1. Locate the release tab on the top of the chassis fan, at the rear of the chassis. Push the release tab down to unlock the fan.

2. Once the fan is unlocked, tip it forward and out of the chassis.

3. When replacing the rear chassis fan, push the fan back into the fan module until a click is heard, indicating that the fan has locked into position.

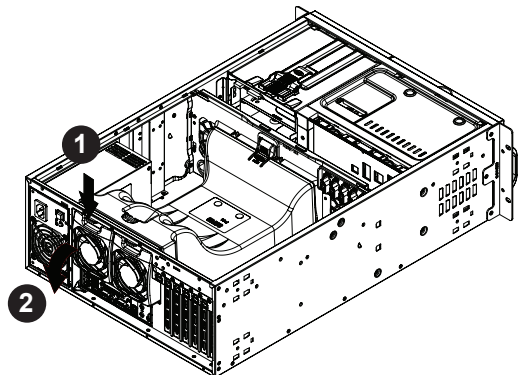



**Figure 4-9: Removing Rear Chassis Fans**

## 4-8 Removing the Air Shroud

Before installing the motherboard in the chassis or accessing the motherboard after installation, it is necessary to remove the air shroud between the two sets of system fans.

SC743TQ-865B-SQ model chassis are equipped with a specialized air shroud to accomodate the super quiet front and rear fans. Be sure to specify air shroud model number MCP-310-74301-ON when ordering, in the unlikely event that the air shroud needs to be replaced.

***Removing the Air Shroud***

1. Press the release tab on the middle chassis bracket until a click is heard.
2. Press the release tab on the back of the rear chassis fans.
3. Lift the air shroud upward and out of the chassis.

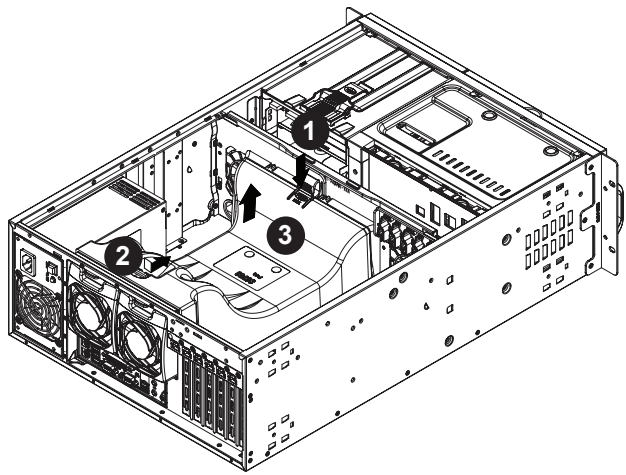



**Figure 4-10: Installing the Air Shroud**

# 4-9 Installing the Motherboard

## Prior to Installing the Motherboard

Before the motherboard can be installed or removed, the middle and rear system fans and the air shroud must be removed, as directed in sections 4-6 and 4-7. The following information is for reference only, the motherboard is not included with the SC743 chassis.

Identify the locations of the following components:

- Processor(s)
- Mounting holes
- Retention brackets
- Type A (6-32) screws (included in the chassis accessory kit)

Obtain the following parts for the motherboard being used. These should be included with the motherboard. (Refer to the motherboard documentation for details)

- I/O shield
- Chassis standoffs
- Heatsink retention brackets

## Motherboard Installation

***Installing the Motherboard***

1. Disconnect the power supply.
2. Lay the chassis on a flat surface.
3. Locate the mounting holes on the chassis.
4. Install the standoffs into the holes in the chassis.
5. Install the I/O shield as directed by the motherboard documentation.

6. Secure the heatsink to the motherboard as directed by the motherboard documentation.

7. Secure the motherboard to the chassis using Type A screws, which are included in the chassis accessory kit.

8. Replace the middle and rear system fans as directed in section 4-6.

9. Replace the air shroud as directed in section 4-7.

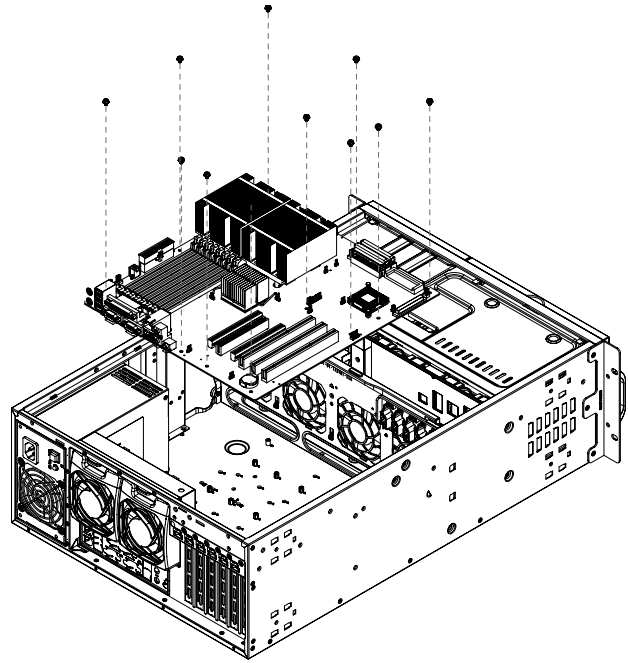


**Figure 4-11: Installing the Motherboard**

**Warning:** The system fans, air shroud and chassis cover must be installed prior to operating the system. Out-of-warranty damage may result if the system is operated without proper cooling protection in place.

## 4-10 Installing Add-on Cards

After installing the motherboard, add-on cards such as PCI cards may be installed into the chassis.

***Installing Add-on Cards***

1. Locate the release tab on the top of the add-on card bracket
2. Gently apply pressure on the middle of the release tab to unlock the bracket as shown.

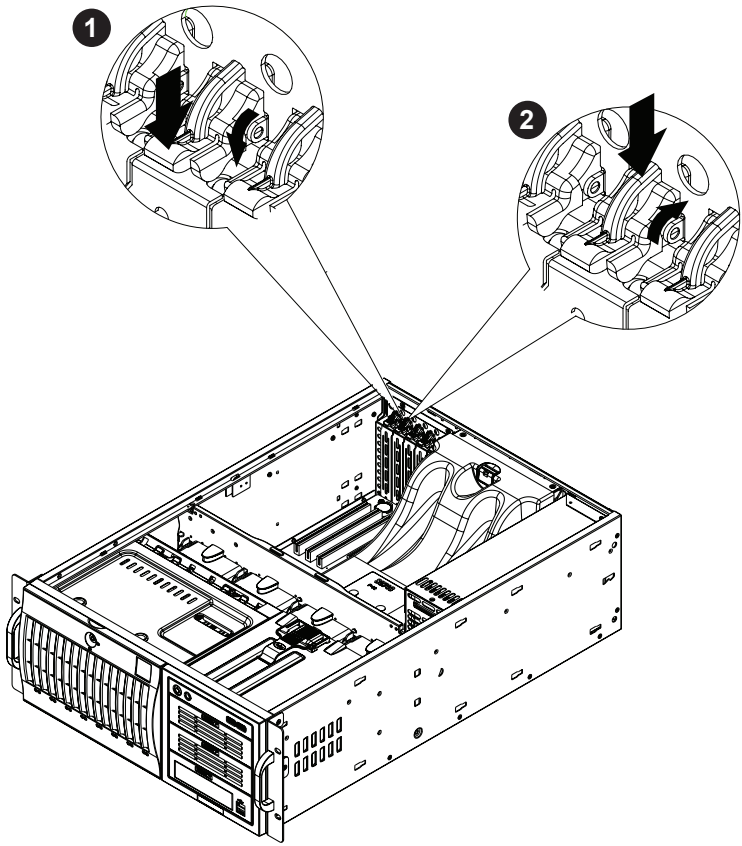



**Figure 4-12: Installing Add-on Cards**

3. Once the bracket is unlocked, pull the release tab upward and remove the bracket from the chassis.

4. After removing the bracket from the chassis, add-on cards may be installed in the bracket.

5. Install the bracket with the newly installed add-on card back into the chassis by gently pushing the bracket into the slot until it clicks into place.

## 4-11 Power Supply

The SC743 chassis includes a power supply rated at either 645, 650, 760 or 865 Watts. In the unlikely event that you need to replace the power supply, simply follow the directions for your specific power supply below.

**Warning:** Always unplug the power cord before removing the power supply.

**Warning:** Do not open the casing of the power supply. Power supplies can only be serviced by a qualified manufacturer's technician.

### 465, 645, 650 and 865 Watt Power Supplies

The 465, 645, 650 and 865 Watt power supplies offer different features, but are designed to be installed and removed from the chassis in the same way.

***Installing the Power Supply***

1. Unplug the power cord from the power supply.
2. Using a Phillips head screwdriver, remove the four screws holding the power supply in place and set them aside for later use.
3. Carefully lift the power supply up and out of the chassis.

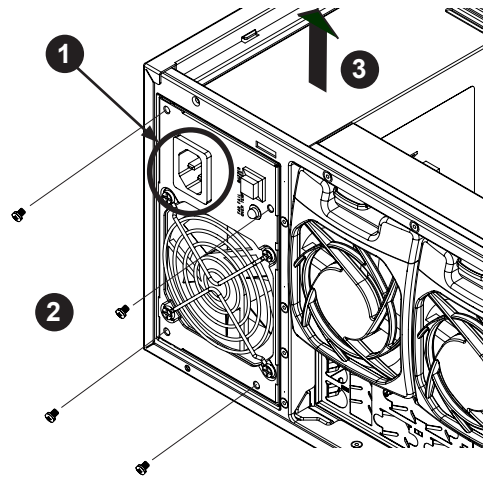



**Figure 4-13: Installing the 645, 650 or 865 Watt Power Supply**

4. Install the replacement power supply in the chassis.

5. Replace the screws which were set aside previously.

6. Replace any other components in the chassis that have been removed and replace the chassis cover before replacing the power cord and powering up the system.

## 760 Watt Power Supply

The 760 Watt power supply is a triple redundant power supply with a different configuration than that of the 465, 645, 650 and 865 Watt power supplies.

***Installing the Power Supply***

1. Unplug the power cord from the power supply.

2. Push the release tab on the left side of each power supply to release it from the locked position.

3. Once released from the locked position, pull the power supply outward, using the handle provided.

4. Install the replacement power supply in the chassis.

5. Replace any other components in the chassis that have been removed and replace the chassis cover before replacing the power cord and powering up the system.

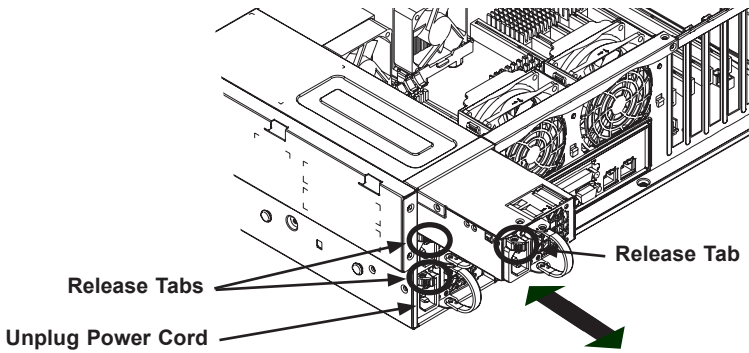



**Figure 4-14: Installing the 760 Watt Power Supply**

## 4-12 Accessing the Interior Space Between the Backplane and the Midplane

For easy access to the interior space between the backplane and the midplane, follow the instructions below before installing components or cables into this area.

***Accessing the Interior Space***

1. Remove the two screws as shown below and set them aside for future use.
2. Remove the three screws on the bottom of the bracket between the back plane and the mideplane.
3. Use a standard screwdriver to gently press the release tabs to release the midplane
4. Pull the midplane forward approximately 35 degrees, as shown in the illustration below. The interior space is now accessible.

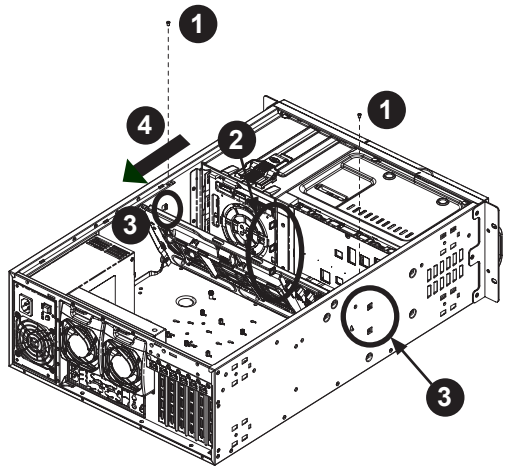



**Figure 4-15: Accessing the Interior Backplane/Midplane Space**

## 4-13 SCSI (Super) GEM Driver Installation Instructions for Windows OS

Note: This driver is not necessary for other operating systems. If you have two SCA backplanes, you will need to install the driver twice. The driver is located on the Super Micro motherboard driver CD or may be downloaded from the Supermicro ftp site: ftp://ftp.supermicro.com/driver/Qlogic/

Follow the procedure below to install this driver onto your system.

***Installing the Driver***

1. Right click on the **My Computer** icon and choose **Properties**.
2. Select the **Hardware** tab and click on **Device Manager**.
3. Open **System Devices** or browse to the location of **GEM318**.
4. Right click on this device and select **Properties**.
5. Click on **Driver** tab and select **Update Driver**.
6. Click the **Next** button twice.
7. Uncheck both options for **Floppy Disk Drives** and **CD-ROM Drives**.
8. Select **Specify a Location** and click the **Next** button.
9. Click on the **Browse** button and select the drive containing the **Supermicro Setup CD**.
10. Select the **Qlogic** folder and click on the **Open** button.
11. System will automatically detect GEM318 and install the drive from this point on.

Or, use the following procedure:

***Installing the Driver (Alternative Procedure)***

1. Right click the "My Computer" icon on your desktop and choose Properties.

2. Click on the **Hardware** tab and select **Device Manager** to bring up the list of system devices.

3. You may see one or two yellow question marks (?) that read QLogic GEM354 or GEM318 SCSI Processor Device. Right click on these, and select uninstall. If two such question marks are present, uninstall both.

4. Select the **Action** tab and click on **Scan for Hardware Changes**. The Hardware Wizard program should start up. Click the **Next** button.

5. At the first prompt, select **Display a list of known device drivers for the device so that I can choose a specific driver** and click the **Next** button.

6. Select **Other Devices** and click **Next**.

7. Select **Have Disk**, specify your floppy drive location in the options box, and click **Next**.

8. Select **Enclosure Services Device** and click **Next**.

9. Ignore the warning prompt by clicking **Yes**.

# Notes

# Chapter 5

# Rack Installation

## 5-1 Overview

This chapter provides a quick setup checklist to get your chassis up and running. Following these steps in the order given should enable you to have the system operational in a minimal amount of time.

## 5-2 Unpacking the System

You should inspect the box the chassis was shipped in, and note if it was damaged in any way. If the chassis itself shows damage, you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold your chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. You will also need it placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

## 5-3 Preparing for Setup

The box your chassis was shipped in should include four mounting screws, which you will need if you intend to install the system into a rack. Please read this section in its entirety before you begin the installation procedure outlined in the sections that follow.

### Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in back of the rack to allow for sufficient airflow and ease in servicing.

- This product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and similar environments).

## Warnings and Precautions!

### Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In single rack installation, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a component from the rack.
- You should extend only one component at a time. Extending two or more simultaneously may cause the rack to become unstable.

### General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.
- Determine the placement of each component in the rack.
- Install the heaviest server components on the bottom of the rack first, and then work up.
- Use a regulating, uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the hard drives and power supply modules to cool before touching them.
- Always keep the rack's front door, all panels and all components on the servers closed when not servicing, in order to maintain proper cooling.

## Rack Mounting Considerations

### Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

### Reduced Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

### Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

### Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

### Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (for example, the use of power strips, and other devices).

## 5-4 Installing the Chassis Rack Mounting Rails

***Before Installing the Chassis Rails***

1. Unplug the power cord from the from the power supply.
2. Secure the chassis cover.
3. Remove all external devices and connectors.

***Installing the Inner Chassis Rails***

1. Locate the pair of inner rails and two sets of screws (6 screws per set) that are included in the shipping package.
2. Align the inner rails against the chassis as shown.

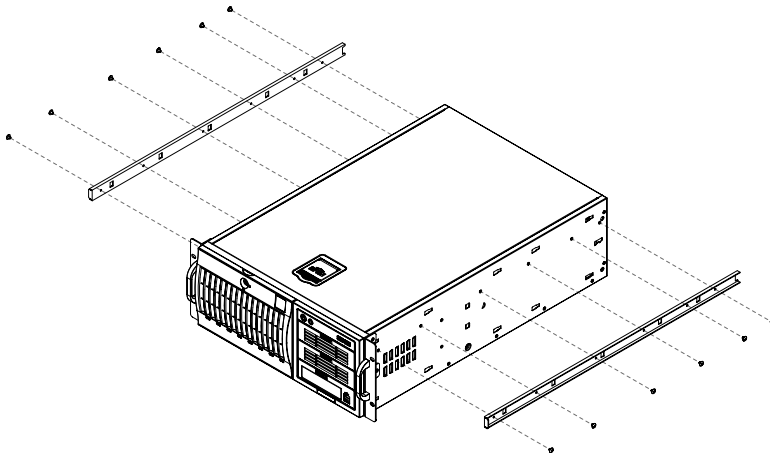


**Figure 5-1: Installing the Inner Chassis Rails**

3. Secure the inner rails onto the chassis with the screws provided. Ensure that the inner rails are mounted flush with the edge of the chassis.

***Installing the Outer Chassis Rails***

1. Locate the two pairs of outer rails. Each pair consists of one middle rail, one end bracket and one end rail as shown.

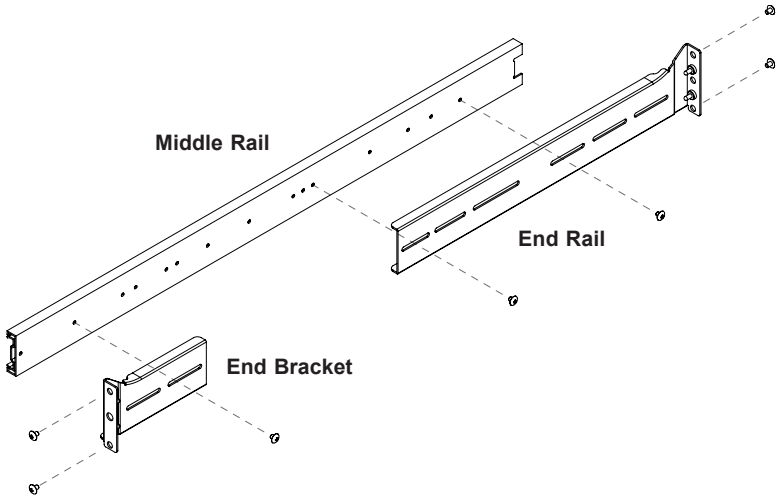



**Figure 5-2: Assembling the Outer Chassis Rails**

2. Insert the end bracket and the end rail onto the middle rail and secure them with the screws as shown.

3. Install a set of outer rail assemblies to each side of the rack and secure them with the screws provided.

4. Check that both sets of inner rails are securely attached to the chassis.

5. Check that both sets of outer rails are securely attached to the rack.

6. Insert the inner rails on the chassis, into the outer rails on the rack.

7. Gently slide the chassis into position within the rack.

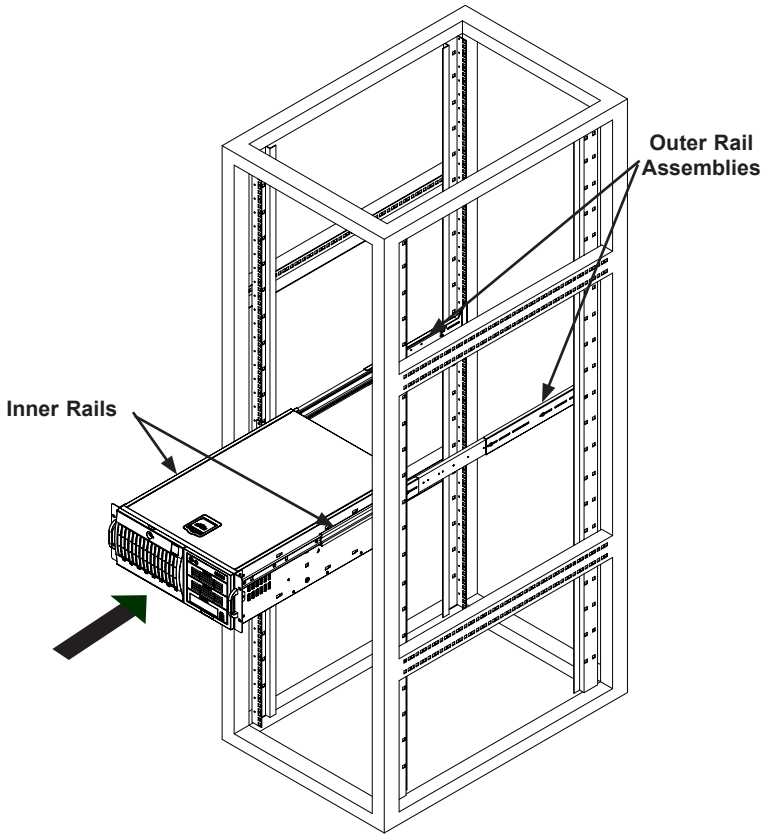



**Figure 5-3: Mounting the Chassis into a Rack**

# Appendix A

# Cables, Screws, and other Accessories

## A-1 Overview

This appendix lists supported cables for your chassis system. It only includes the most commonly used components and configurations. For more compatible cables, refer to the manufacturer of the motherboard you are using and to the Supermicro Web site at: www.supermicro.com.

## A-2 Cables Included with the SC743 Chassis

| SC743S1 Series (SCSI) | | | |
|---|---|---|---|
| **Part #** | **Type** | **Length** | **Description** |
| CBL-033L-U320 | Cable | 9" | Two-drop SCSI ultra 320 cable |
| CBL-0087 | Cable | 20" | Round 16-pin to 16-pin front panel ribbon cable |
| CBL-0084 | Cable | 6" | Split converter cable |
| CBL-0063L | Cable | 20" | SCSI cable |
| CBL-0062L | Cable | 7.9" | 12V 8-pin to 8-pin power connector extension cable |
| CBL-0209L | Cable | 8.26" (210mm) | 4-pin to 3-pin fan power cable |

| SC743S2 Series (SCSI) | | | |
|---|---|---|---|
| **Part #** | **Type** | **Length** | **Description** |
| CBL-033L-U320 | Cable | 9" | Two-drop SCSI ultra 320 cable |
| CBL-0087 | Cable | 20" | Round 16-pin to 16-pin front panel ribbon cable |
| CBL-0084 | Cable | 6" | Split converter cable |
| CBL-0063L | Cable | 20" | SCSI cable |
| CBL-0062L | Cable | 7.9" | 12V8-pin to 8-pin power connector extension cable |
| CBL-0209L | Cable | 8.26" (210mm) | 4-pin to 3-pin fan power cable |

| SC743T Series (SAS/SATA) | | | |
|---|---|---|---|
| **Part #** | **Type** | **Length** | **Description** |
| CBL-0044L | Cable | 2' | SATA cable (Amphenol) |
| CBL-0087 | Cable | 20" | Round 16-pin to 16-pin front panel ribbon cable |
| CBL-0084 | Cable | 6" | Split converter cable |
| CBL-0062L | Cable | 7.9" | 12V 8-pin to 8-pin power connector extension cable |
| CBL-0209L; | Cable | 8.26" (210mm) | 4-pin to 3-pin fan power cable |

| SC743TQ Series (SATA/SCSI) | | | |
|---|---|---|---|
| **Part #** | **Type** | **Length** | **Description** |
| CBL-0044L | Cable | 2' | SATA cable (Amphenol) |
| CBL-0087 | Cable | 20" | Round 16-pin to 16-pin front panel ribbon cable |
| CBL-0084 | Cable | 6" | Split converter cable |
| CBL-0157L | Cable | 15.8" | 8-pin to 8-pin ribbon cable for SGPIO (supports up to 4 drives) |
| CBL-0216L | Cable | 8.26" (210mm) | 4-pin to 4-pin fan power cable |

| SC743i Series | | | |
|---|---|---|---|
| **Part #** | **Type** | **Length** | **Description** |
| CBL-0087 | Cable | 20" | Round 16-pin to 16-pin front panel ribbon cable |
| CBL-0084 | Cable | 6" | Split converter cable |
| CBL-0209L | Cable | 8.26" (210mm) | 4-pin to 3-pin fan power cable |
| CBL-0216L | Cable | 8.26" (210mm) | 4-pin to 4-pin fan power cable (optional) |

## Extending Power Cables

Although Supermicro chassis are designed with to be efficient and cost-effective, some compatible motherboards have power connectors located in different areas. To use these motherboards you may have to extend the power cables to the mother boards. To do this, use the following chart as a guide.

| Power Cable Extenders | | |
|---|---|---|
| **Number of Pins** | **Cable Part #** | **Length** |
| 24 pin | CBL - 0042 | 7.9”(20 CM) |
| 20 pin | CBL - 0059 | 7.9”(20 CM) |
| 8 pin | CBL - 0062 | 7.9”(20 CM) |
| 4 pin | CBL - 0060 | 7.9”(20 CM) |

## Front Panel to the Motherboard

The SC743 chassis includes a cable to connect the chassis front panel to the motherboard. If your motherboard uses a different connector, use the following chart to find a compatible cable.

| Front Panel to Motherboard Cable (Ribbon Cable) | | |
|---|---|---|
| **Number of Pins (Front Panel)** | **Number of Pins (Motherboard** | **Cable Part #** |
| 16 pin | 16 pin | CBL - 0049 |
| 16 pin | 20 pin | CBL - 0048 |
| 20 pin | 20 pin | CBL - 0047 |
| 16 pin | various* | CBL - 0068 |
| 20 pin | various* | CBL - 0067 |

* Split cables: Use these cable if your motherboard requires several different connections from the front panel.

## A-3 Chassis Screws

The accessory box includes all the screws needed to setup your chassis. This section lists and describes the most common screws used. Your chassis may not require all the parts listed.

**M/B**

Pan head
6-32 x 5 mm
[0.197]

**HARD DRIVE**

Flat head
6-32 x 5 mm
[0.197]

**DVD-ROM, CD-ROM, and FLOPPY DRIVE**

Pan head
6-32 x 5 mm
[0.197]

Flat head
6-32 x 5 mm
[0.197]

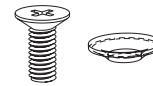
Round head
M3 x 5 mm
[0.197]

Round head
M2.6 x 5 mm
[0.197]

**RAIL**

Flat head
M4 x 4 mm
[0.157]

Round head
M4 x 4 mm
[0.157]



Flat head
M5 x 12 mm[0.472]

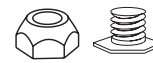
Washer for M5

**M/B STANDOFFS**

M/B standoff
6-32 to 6-32

M/B (CPU)
standoff
M5 to 6-32

Thumb screw
6-32 x 5 mm
[0.197]



1/U M/B standoff
6-32 x 5 mm
[0.197]

# Appendix B

# Power Supply Specifications

## B-1 Power Supply Options

This appendix lists power supply specifications for your chassis system.

| | 465W |
|---|---|
| **MFR Part #** | PWS-465-PQ |
| **Rated AC Voltage** | 100 - 240V<br>60 - 50Hz<br>6 - 3 Amp |
| **+5V standby** | 3 Amp |
| **+12V** | 35 Amp |
| **+5V** | 20 Amp |
| **+3.3V** | 15 Amp |
| **-12V** | 0.5 Amp |

| | 645W |
|---|---|
| **MFR Part #** | PWS-0060 |
| **Rated AC Voltage** | 100 - 240V<br>50 - 60Hz<br>11 - 5 Amp |
| **+5V standby** | 4.0 Amp |
| **+12V** | 46 Amp |
| **+5V** | 30.0 Amp |
| **+3.3V** | 30.0 Amp |
| **-12V** | 0.6 Amp |

| | 650W |
|---|---|
| **MFR Part #** | PWS-0056 |
| **Rated AC Voltage** | 100 - 240V<br>50 - 60Hz<br>11 - 5Amp |
| **+5V standby** | 4.0 Amp |
| **+12V** | 46 Amp |
| **+5V** | 30.0 Amp |
| **+3.3V** | 30.0 Amp |
| **-12V** | 0.6 Amp |

| | 760W |
|---|---|
| **MFR Part #** | PWS-0056 |
| **Rated AC Voltage** | 100 - 240V<br>50 - 60Hz<br>14- 8 Amp |
| **+5V standby** | 3.5 Amp |
| **+12V** | 50.0 Amp |
| **+5V** | 36.0 Amp |
| **+3.3V** | 36.0 Amp |
| **-12V** | 1.0 Amp |

| | 865W |
|---|---|
| **MFR Part #** | PWS-865-PQ |
| **Rated AC Voltage** | 100 - 240V<br>50 - 60Hz<br>12- 6 Amp |
| **+5V standby** | 6.5 Amp |
| **+12V** | 70.0 Amp |
| **+5V** | 30.0 Amp |
| **+3.3V** | 30.0 Amp |
| **-12V** | 1.0 Amp |

# Appendix C

# CSE-M34S/CSE-M34T Mobile Rack Specifications

## C-1 Overview

This manual is written for system integrators, PC technicians and knowledgeable PC users. It provides detailed information for the installation and use of the CSE-M34S/CSE-M34T Mobile Rack.

The Supermicro CSE-M34S/CSE-M34T Mobile Rack offers cutting edge technolgy with greater flexibility. The CSE-M34T supports 4 Serial ATA hot-swappagle hard drives. These hard drive yield an unparalleled storage capacity without compromising productivity, by eliminating possible system downtime. The CSE-M34S also accommodates four SCSI SCA 320/160 hard drives, providing configuration flexibility and maximum data integrity.

If your system is running on a Windows operating system, refer to section 4-11 of this manual for instructions on installing the appropriate drivers required by the backplane of the CSE-M34S or CSE-M34T mobile rack.

## C-2 Product Features

| | |
|---|---|
| Occupancy | • Three (3) 5.25" drive bays |
| Capacity | • Five (5) 1" SCA Ultra 320/160 hard drives with SAF-TE built-in (CSE-M35S only)<br>• Five (5) 1" host receptacle connectors, SATA hot-swappable hard drives (CSE-M35T-1 only) |
| Cooling Subsystem<br>Monitoring | • One (1) 9cm exhaust fan<br>• Fan fail detection LED and alarm<br>• Overheat LED indication<br>• Drive fail alarm indication (CSE-M35S only)<br>• Built-in termination (CSE-M35S only) |
| Dimension (WxHxD) | • 146mm x 129mm x 245mm (5.7 in x 5.0 in x 9.5 in) |
| Weight | • Net: 5.9lb (2.9 kg), Gross: 7.5lb (3.7 kg) |

Chassis supported: SC762, SC830, SC942, and SC743.

## C-3 Packing List

The CSE-M34S/CSE-M34T mobile rack provides the following:

- CSE-M34S/CSE-M34T mobile rack
- 90mm exhaust fan
- Drive carrier four (4)CSE-PT10 (-beige only)
- Six (6) counts of 6-32 hex washer head screws
- Eight (8) counts of M3 washer head screws
- Eighteen (18 )counts of pan head screws

(*For CSE-M34T only)

- *Serial ATA backplane (CSESATA-M34)
- *Four (4) Serial ATA cables (CBL-0044)
- *Serial ATA LED cable (CBL-0057)
- *SCSI cable (CBL-027-U320)
- *SCSI backplane (CSESCA-002)

### Supported Operating Systems

This mobile rack supports the following operating systems:

- Windows 2000, Windows XP, and Windows 2003
- Linux: Red Hat and SuSE

## Additional Information

The CSE-M34S/CSE-M34T mobile rack was designed for use in certain chassis and servers or as a stand alone unit. Use the chassis or server manual for installation instructions. Use the instructions listed in this manual to use the mobile rack independent of a chassis.

The pictures or graphics shown in this user's guide were based upon the latest PCB revision available at the time of the publishing of this manual. The CSE-M34S/CSE-M34T mobile rack may or may not look exactly the same as the graphics shown in this manual. The availability of SAS-devices supported depends on the readiness of firmware and hardware support.

## C-4 Front Connectors and Jumpers

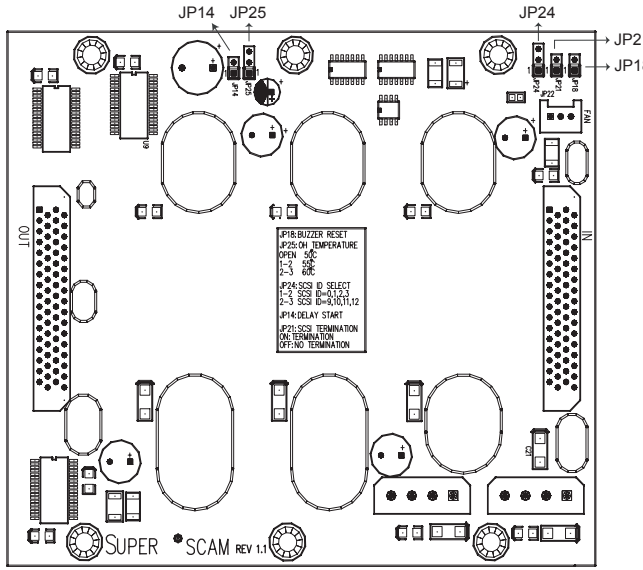



**Figure C-1. Mobile Rack Backplane (Front)**

### Jumper Settings

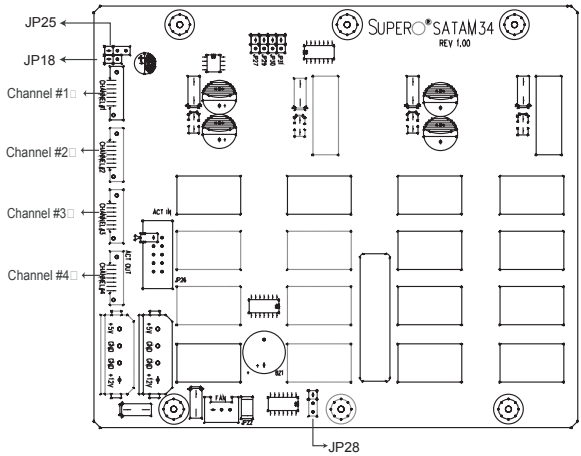
Jumper settings for the CSE-M34S (SCSI)

| Jumper | Description | Setting |
|---|---|---|
| JP14 | Delay start | Closed: Enable<br>Open Disable (default) |
| JP18 | Bumper Reset | Closed: Enable<br>Open Disable (default) |
| JP21 | SCSI Termination | Closed: Enable<br>Open Disable (default) |
| JP24 | SCSI ID Selection | 1-2: SCSI IDs: 0, 1, 2, 3, 4, (default)<br>2-3: SCSI IDs: 9,10,11,12,13 |
| JP25 | Overheat Temperature | Open: 50 degrees Celcius<br>1-2: 55 degrees Celcius (default)<br>2-3: 60 degrees Celcius (default) |

| | | |
|---|---|---|
| JP18 | Buzzer Reset | Closed: Enable<br>Open: Disable (default) |
| JP25 | Overheat Tempera-ture | Open: 45 degrees Celcius<br>1-2: 50 degrees Celcius<br>2-3: 55 degrees Celcius |
| JP26 | Common Act#1-Act#4 | Connect this header to CBL-0057 (SATA LED Cable) |
| JP27 | Common Act In-Act#1 | Closed: Enable<br>Open: Disable (default) |
| JP28 | Fan Sense | 1-2: Enabled (if a fan is not present, the alarm will sound) (default)<br>2-3: Disabled |
| JP29 | Common Act In-Act#2 | Closed: Enable<br>Open: Disable (default) |
| JP30 | Common Act In-Act#3 | Closed: Enable<br>Open: Disable (default) |
| JP31 | Common Act In-Act#1 | Closed: Enable<br>Open: Disable (default) |
| JP32 | Common Act Out | Closed: Enable<br>Open: Disable (default) |

## Jumper Settings and Locations for the CSE-M35T (SATA)

**Figure C-2: Jumper Locations**




Activity LEDs Pin Definitions JP26

Act. LED1 = Channel 1

Act. LED2 = Channel 2

Act. LED3 = Channel 3

Act. LED4 = Channel 4

## Installation Procedures

***Installing the CSE-M35S Backplane***

1. SCSI IDs are assigned automatically by the backplane. **Do not set IDs manually on the drives.** See the previous section for SCSI ID jumper settings.

2. SCSI termination is enabled by default on the SCSI backplane.

***Accessing Hot-Swappable Drives***

1. Push the release button located beside each drive's LED.

2. Lift up on the drive's handle.

3. Carefully pull the drives out of the storage module.

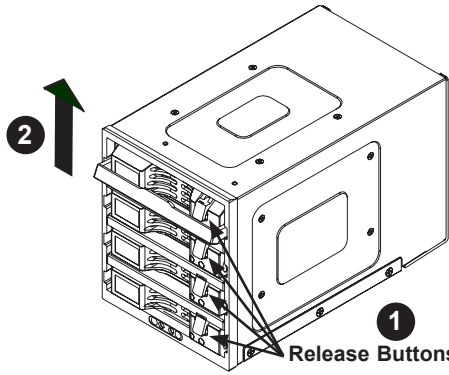



**Figure C-3: Jumper Locations**

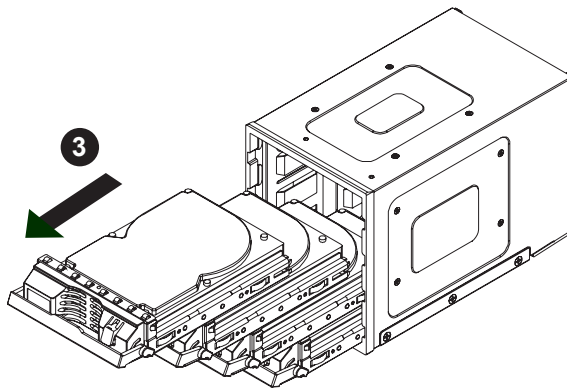



**Figure C-4: Jumper Locations**

***Installing a Drive into the Drive Tray***

1. Mount the drive in the drive tray.

2. Secure it into the drive tray as shown with the screws provided.

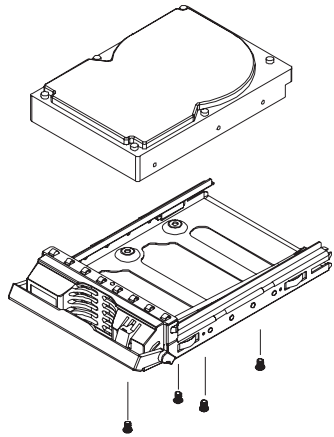


**Figure C-5: Installing the Drive into the Drive Tray**

## Accessing the Backplane

1. Remove the screws located on the back of the mobile rack unit as shown

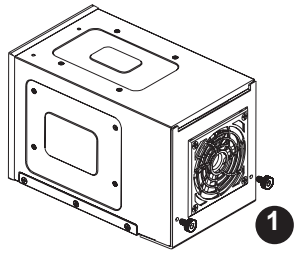



**Figure C-6: Removing the Outer Screws CSE-M34T (SATA)**

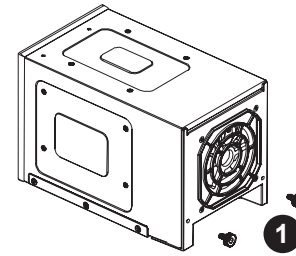



**Figure C-7: Removing the Outer Screws CSE-M34S (SCSI)**

2. Pull out the rear fan bracket

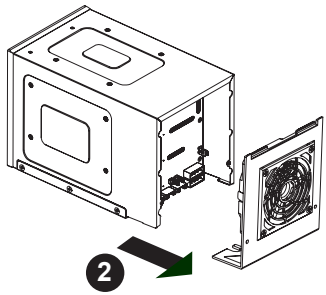



**Figure C-8: Removing the Rear Fan Bracket CSE-M34T (SATA)**

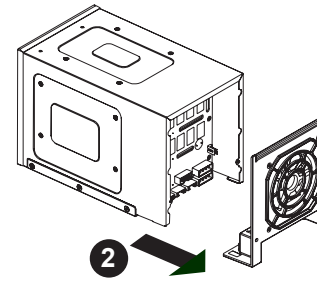



**Figure C-9: Removing the Rear Fan Bracket CSE-M34S (SCSI)**

3. Remove the screws securing the backplane. 4. Remove the backplane.

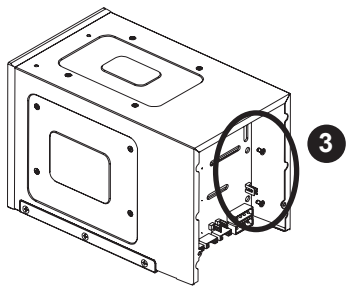



**Figure C-10: Removing the Screws CSE-M34T/S (SATA/SCSI)**

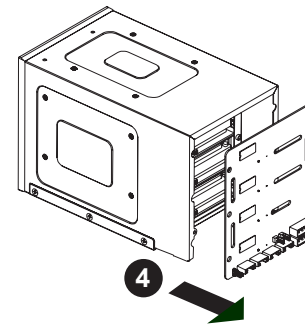



**Figure C-11: Removing the Backplane CSE-M34T/S (SATA/SCSI)**

# Notes

# Appendix D

# CSE-M35S/CSE-M35T1 Mobile Rack Specifications

## D-1 Overview

Supermicro's CSE-M35S/CSE-M35T1 Mobile Rack Series offers cutting edge technology with greater flexibility. The CSE-M35T1 supports five serial ATA hot-swappable hard drives that yield an unparalleled storage capacity without compromising productivity, by eliminating possible system down-time. The CSE-M35S accommodates five SCSI SCA 320/160 hard drives which provide configuration flexibility and maximum data integrity.

If your system is running on a Windows operating system, refer to section 4-11 of this manual for instructions on installing the appropriate drivers required by the backplane of the CSE-M35S or CSE-M35T1 mobile rack.

## D-2 Packing List

Check to see if you have received all the items listed below:

- CSE-M35S/CSE-M35T1 mobile rack
- 90mm exhaust fan (Fan-0057)
- Screws:
  Thirteen (13) counts of Flat Head Screws
  Twenty-four (24) counts of Round Head Screws
  Seven (7) counts of Round Head Screws with Lock-Washer
- Drive carrier - Five (5)CSE-PT17/CSE-PT17(B)(-black)

For CSE-M35T1 only:

- Serial ATA backplane (CSE-SATAM35)
- Five (5) serial ATA cables (CBL-0044)
- Serial ATA LED cable (CBL-0057)

## D-3 Technical Specifications

| | |
|---|---|
| Occupancy | • Three (3) 5.25" drive bays |
| Capacity | • Five (5) SCA Ultra 320/160 hard drives with SAF-TE built-in (CSE-M35S only)<br>• Five (5) 1" host receptacle connectors, SATA hot-swappable hard drives (CSE-M35T-1 only) |
| Cooling Subsystem Monitoring | • One (1) 9cm exhaust fan<br>• Fan fail detection LED and alarm<br>• Overheat LED indication<br>• Drive fail alarm indication (CSE-M35S only)<br>• Built-in termination (CSE-M35S only) |
| Dimension (WxHxD) | • 146mm x 129mm x 245mm (5.7 in x 5.0 in x 9.5 in) |
| Weight | • Net: 5.9lb (2.9 kg), Gross: 7.5lb (3.7 kg) |

Chassis supported: SC762, SC830, SC942 and SC743

## D-4 Jumper Settings

### Jumper Settings for the CSE-M35S (SCSI) Mobile Rack

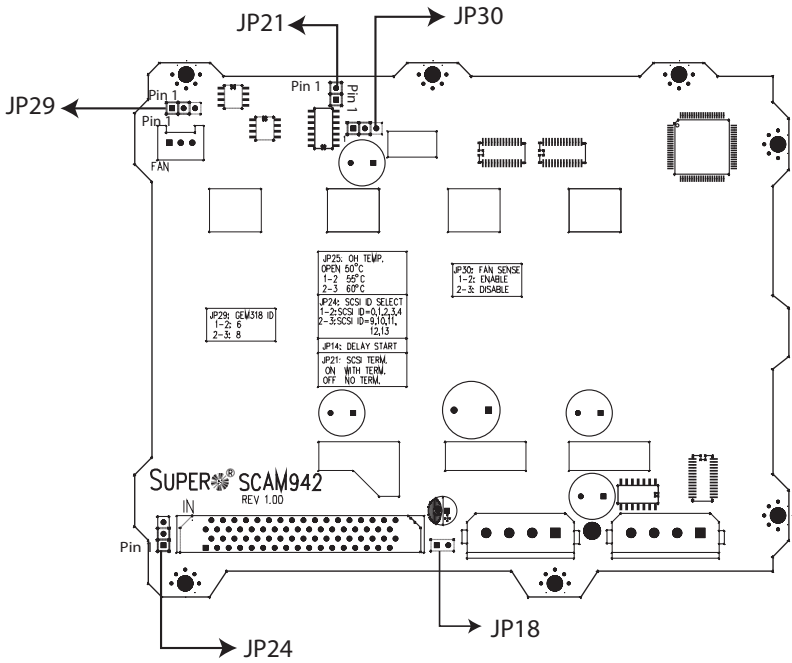



**Figure D-1: Jumper Locations (SCSI)**

| Jumper | Description | Setting |
|---|---|---|
| JP18 | Bumper Reset | Closed: Enable<br>Open Disable (default) |
| JP21 | SCSI Termination | Closed: Enable<br>Open Disable (default) |
| JP24 | SCSI ID Selection | 1-2: SCSI IDs: 0, 1, 2, 3, 4, (*default)<br>2-3: SCSI IDs: 9,10,11,12,13 |
| JP29 | GEM 318 IDs | 1-2: iD6 (default) |
| JP30 | Fan Sensor | Pins 1-2: Enable (default) If a fan is not present, the alarm will sound.<br>Pins 2-3: Disable |

## Location of Jumpers

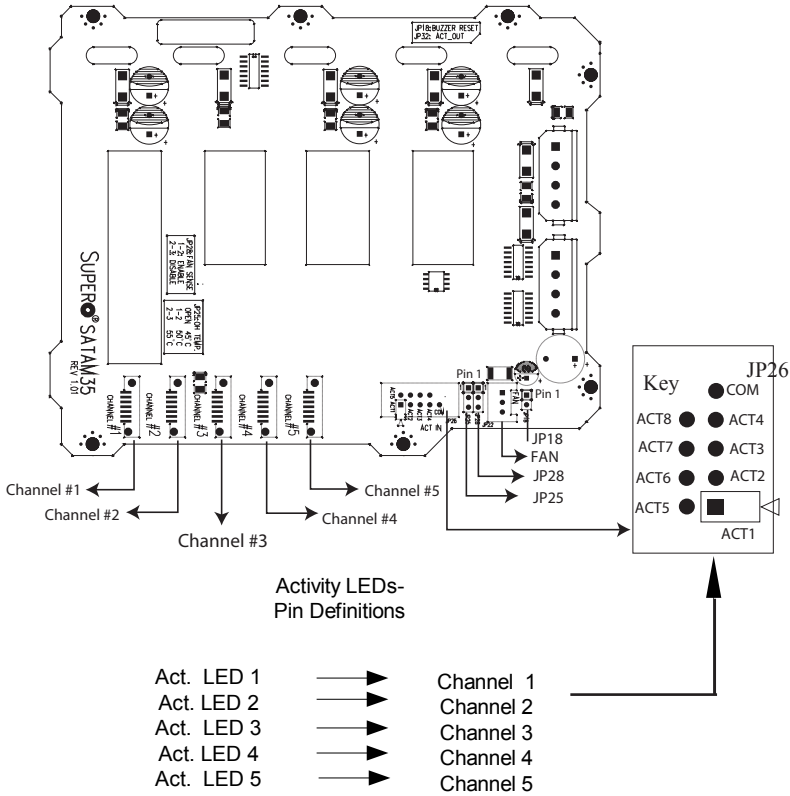



**Figure D-2: Jumper Locations (SATA)**

## Jumper Settings for the CSE-M35T1 (SATA) Mobile Rack

| Jumper | Description | Setting |
|---|---|---|
| JP18 | Buzzer Reset | Closed: Enable<br>Open: Disable (*Default) |
| JP25 | Overheat Temperature | Open: 45°C<br>1-2: 50°C (Default)<br>2-3: 55°C |
| JP26 | Act#1-Act#5 | Connect this header to CBL0057 (SATA LED cable) |
| JP28 | Fan Sense | 1-1 Enabled (if a fan is not present, the alarm will sound)<br>(*Default) 2-3: Disabled |

## D-5 Installing the Hard Drive

***For the CSE-M35S***

1. SCSI IDs are assigned automatically by the backplane. Do not set IDs manually on the driver. Se the previous section for SCSI ID jumper settings.

2. SCSI termination is enabled by default on the SCSI backplane.

### Accessing the Hot-Swappable Drives

***Accessing Drives***

1. Push the release button located beside the drive LEDs as shown.

2. Swing the handle outward.

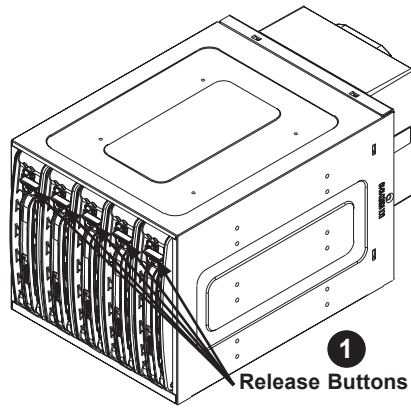



**Figure D-3: Hard Drive Release Buttons**

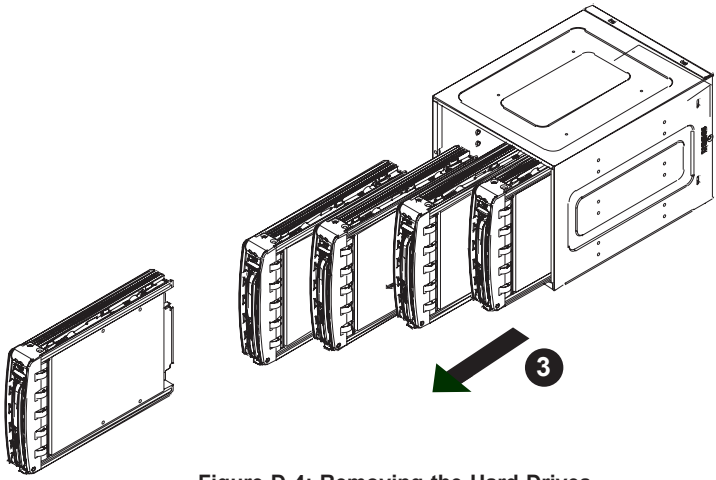



**Figure D-4: Removing the Hard Drives**

3. Pull out the hard drive.
4. Place the hard drive into a drive tray.
5. Insert the screws through the mounting holes and into the hard drive.
6. Replace the hard drive and the hard drive tray into the mobile storage rack

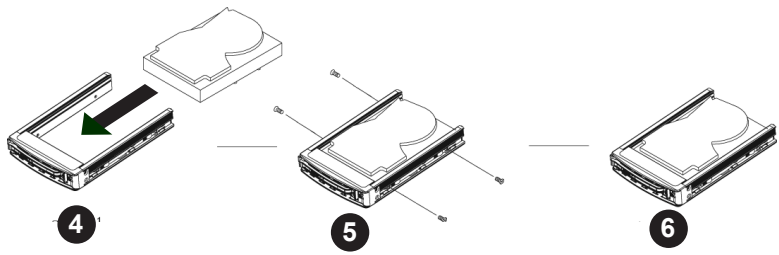



**Figure D-5: Installing the Hard Drives into the Drive Tray**

## D-6 Removing the Exhaust Fan

1. Squeeze the two tabs located on both sides of the exhaust fan as shown:

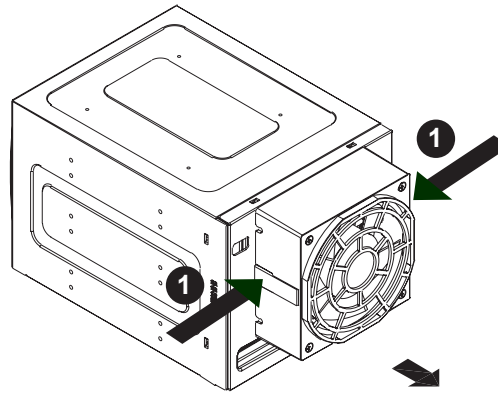



**Figure D-6: Removing the Exhaust Fan**

2. Gently pull the fan away from the back of the mobile storage rack.

   Note: For the SC942 Chassis, the CSE-M35 Rear Exhaust Fan should not be used. Instead, the hot-swappable 120mm chassis fans included with the SC942 chassis should be connected to the backplane of the CSE-M35S/CSE-M35T1 mobile rack.

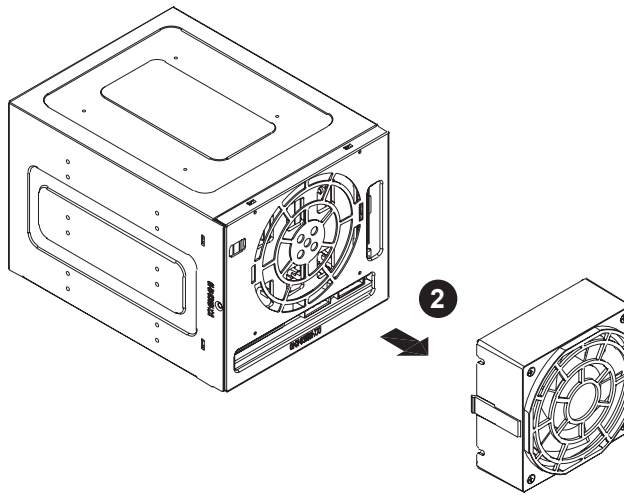



**Figure D-7: Removing the Exhaust Fan**

## D-7 Removing the Backplane

1. Remove the screw located on the side of the storage module as shown.

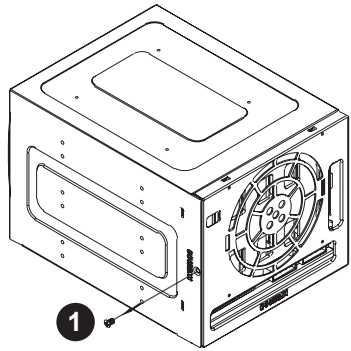



**Figure D-8: Removing the Rear Bracket Screw**

2. Pull the rear bracket out of the storage module.

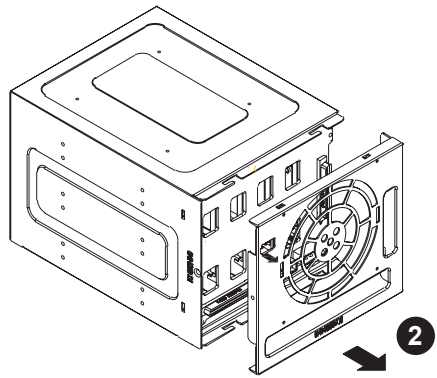



**Figure D-9: Removing the Rear Bracket**

3. Remove the backplane.

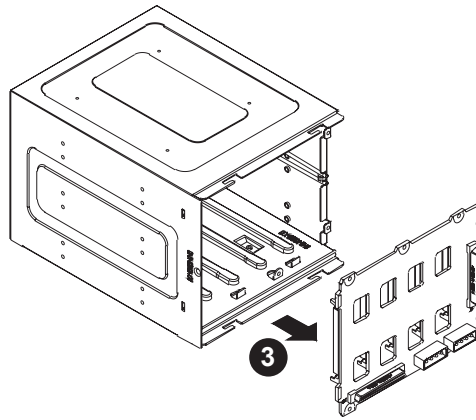



**Figure D-10: Removing the Backplane**

## Notes

# Appendix E
# SAS-743TQ Backplane Sepcifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

## E-1 ESD Safety Guidelines

*Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.*

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the RAID card by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

## E-2 General Safety Guidelines

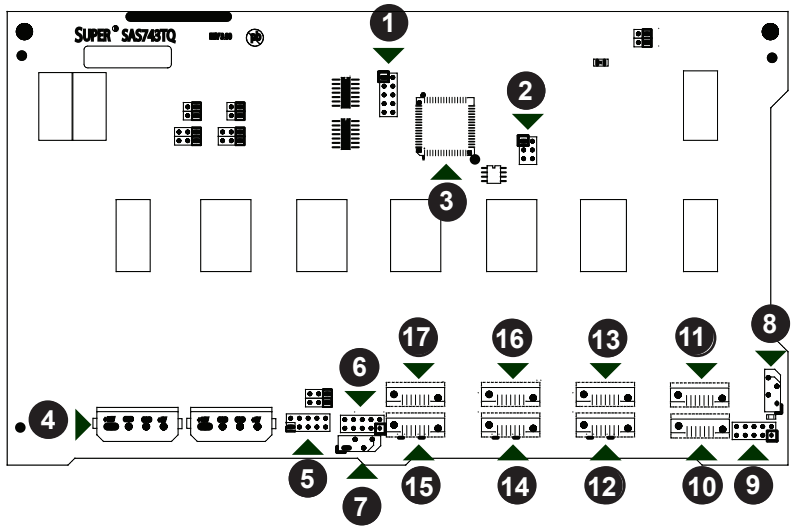
- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

## E-3 An Important Note to Users

- All images and layouts shown in this user's guide are based upon the latest PCB revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

# Jumper Settings and Pin Definitions

## E-4 Front Connectors and Jumpers




### Front Connectors

1. JTAG Connector: JP47
2. Upgrade Connector: JP46
3. Chip: MG9072
4. Power Connectors (4-pin): JP10, and JP13
5. ACT IN: JP26
6. SideBand Connector#2 JP52
7. I²C Connector#2 JP45
8. I²C Connector#1 JP44
9. SideBand Connector#1 JP51
10. SAS Port #0 J5
11. SAS Port #1 J6
12. SAS Port #2 J7
13. SAS Port #3 J8
14. SAS Port #4 J10
15. SAS Port #5 J12
16. SAS Port #6 J14
17. SAS Port #7 J16

## E-5 Front Connector and Pin Definitions

**#1 and 2. JTAG Connector and Upgrade Connectors**

The JTAG and Upgrade Connectors, designated JP47 and JP46, are used for diagnostic purposes. These connectors should be used by a certified and experienced technician.

**#3. MG9072 Chip**

The MG9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

**#4. Backplane Main Power Connectors**

The 4-pin connectors, designated JP10 and JP13, provide power to the backplane. See the table on the right for pin definitions.

**Backplane Main Power 4-Pin Connector (JP10 and JP13)**

| Pin# | Definition |
|---|---|
| 1 | +12V |
| 2 and 3 | Ground |
| 4 | +5V |

**#5. Activity LED Header**

The activity LED header, designated JP26, is used to indicate the activity status of each SAS drive. The Activity LED Header is located on the front panel. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

### #6 and 9. Sideband Headers

The sideband headers are designated JP51 and JP52. For SES-2 to work properly, you must connect an 8-pin sideband cable. See the table to the right for pin definitions.

**Sideband Headers (JP51 and JP52)**

| Pin # | Definition | Pin # | Definition |
|---|---|---|---|
| 2 | Backplane Addressing (SB5) | 1 | Controller ID (SB6) |
| 4 | Reset (SB4) | 3 | GND (SB2) |
| 6 | GND (SB3) | 5 | SDA (SB1) |
| 8 | Backplane ID (SB7) | 7 | SCL (SB0) |
| 10 | No Connection | 9 | No Connection |

### #7 and 8. I²C Connectors

The I²C Connectors, designated JP45 and JP45, are used to monitor HDD activity and status. See the table on the right for pin definitions.

**I²C Connector Pin Definitions (JP44 and JP45)**

| Pin# | Definition |
|---|---|
| 1 | Data |
| 2 | Ground |
| 3 | Clock |
| 4 | No Connection |

### #10 - 17. SAS Ports

The SAS ports are used to connect the SAS drive cables. The 8 ports are designated #0 - #7. Each port is also compatible with SATA drives. However, do NOT mix SAS and SATA drives in the same enclosure.

## E-6 Front Jumper Locations and Pin Definitions

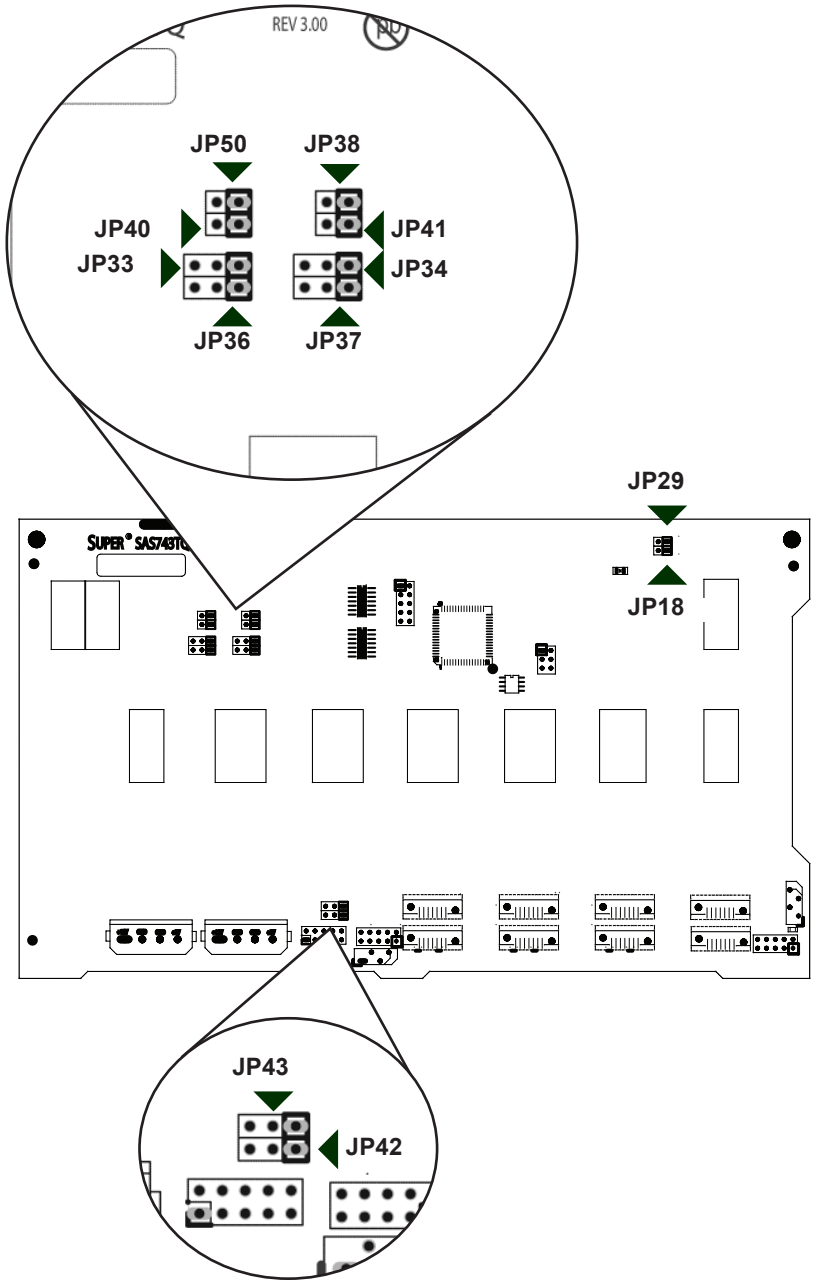
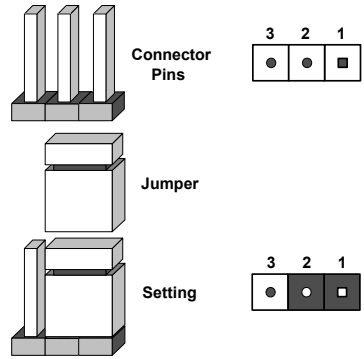



**Figure E-1: Front Jumper Locations**

## Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board.

Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.




| Jumper Settings | | |
|---|---|---|
| **Jumper** | **Jumper Settings** | **Note** |
| JP18 | Open: Enabled<br>Closed: Disabled | Buzzer Reset |
| JP29 | Open: Default<br>Closed: Reset | MG 9072 Chip Reset |

## I²C and SGPIO Mode Jumper Settings

This backplane can utilize I²C or SGPIO. I²C is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use SGPIO mode or restore your backplane to I²C mode.

| I²C Settings (Default) | | |
|---|---|---|
| **Jumper** | **Jumper Setting** | **Note** |
| JP33 | 2-3 | Controller ID #1 |
| JP34 | 1-2:ID#0 | Backplane ID #1 |
| JP36 | 2-3 | Controller ID #2 |
| JP37 | 2-3:ID#1 | Backplane ID #2 |
| JP38 | Closed | I²C Reset #2 |
| JP40 | Open | I²C Reset SDOUT #1 |
| JP41 | Open | I²C Reset SDOUT #2 |
| JP42 | 2-3 | Backplane ID SDIN #1 |
| JP43 | 2-3 | Backplane ID SDIN #2 |
| JP50 | Closed | I²C Reset #1 |

| SGPIO Settings | | |
|---|---|---|
| **Jumper** | **Jumper Setting** | **Note** |
| JP33 | 1-2 | Controller ID #1 |
| JP34 | 1-2 | Backplane ID #1 |
| JP36 | 1-2 | Controller ID #2 |
| JP37 | 1-2 | Backplane ID #2 |
| JP38 | Open | I²C Reset #2 |
| JP40 | Closed | I²C Reset SDOUT #1 |
| JP41 | Closed | I²C Reset SDOUT #2 |
| JP42 | 1-2 | Backplane ID SDIN #1 |
| JP43 | 1-2 | Backplane ID SDIN #2 |
| JP50 | Open | I²C Reset #1 |

## SAS Port Connections in I²C and SGPIO Settings

Use the following chart when connecting this backplane. If you connect the SAS ports out of order, you will not able to easily identify drives using the LED function.

| SAS Port Connections in I²C and SGPIO Settings | | |
|---|---|---|
| **Port #** | **I²C** | **SGPIO** |
| # 0 - 3 | I²C #1 | Sideband #1 |
| # 4 - 7 | I²C #2 | Sideband #2 |

### Front LED Indicators

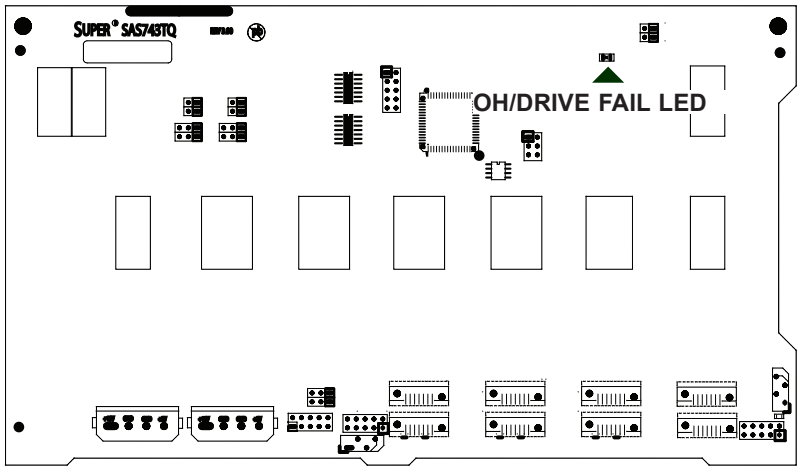



**Figure E-2: Front LEDs**

| Front Panel LEDs | | |
|---|---|---|
| **LED** | **State** | **Specification** |
| D3 | ON | Overheat/Drive Failure LED Indicator<br>(Red light: flashing, Buzzer: On, if activated) |

## E-7 Rear Connectors and LED Indicators

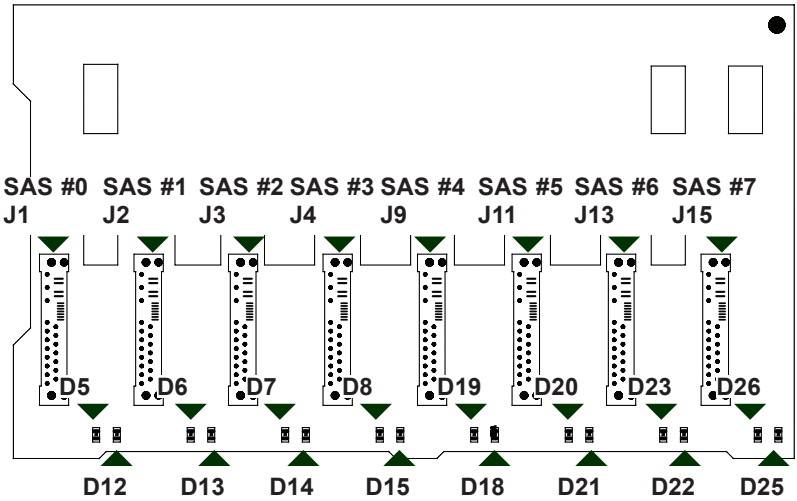



**Figure E-3: Rear Connectors**

| Rear SAS/SATA Connectors | |
|---|---|
| **Rear Connector** | **SAS Drive Number** |
| SAS #0 | SAS/SATA HHD #0 |
| SAS #1 | SAS/SATA HHD #1 |
| SAS #2 | SAS/SATA HHD #2 |
| SAS #3 | SAS/SATA HHD #3 |
| SAS #4 | SAS/SATA HHD #4 |
| SAS #5 | SAS/SATA HHD #5 |
| SAS #6 | SAS/SATA HHD #6 |
| SAS #7 | SAS/SATA HHD #7 |

| Rear LED Indicators | | |
|---|---|---|
| **Rear LED** | **Hard Drive Activity** | **Failure LED** |
| SAS #0 | D12 | D5 |
| SAS #1 | D13 | D6 |
| SAS #2 | D14 | D7 |
| SAS #3 | D15 | D8 |
| SAS #4 | D18 | D19 |
| SAS #5 | D21 | D20 |
| SAS #6 | D22 | D23 |
| SAS #7 | D25 | D26 |

Disclaimer (cont.)

The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices or other critical systems whose failure to perform be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.